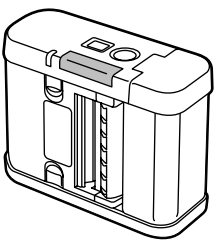
TEC

TEC Portable Printer

B-SP2D SERIES

Owner's Manual



TOSHIBA TEC CORPORATION

CE Compliance (for EU only)

This product complies with the requirements of EMC, Low Voltage and R&TTE Directives including their amendments.

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

"This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations."

"Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada."

(for CANADA only)

VORSICHT:

- *Schallemission: unter 70dB (A) nach DIN 45635 (oder ISO 7779)*
- *Die für das Gerät Vorgesehene Steckdose muß in der Nähe des Gerätes und leicht zugänglich sein.*

Some types of this product are equipped with a wireless communication device, such as, TEC-BTM and TEC-WLM. Please be sure to read the enclosed Precautions for Handling of Wireless Communication Devices before using this product.

IrCOMM (9-wire) is a trademark owned by Link Evolution Corporation and is used by TOSHIBA TEC under lincense.

IrDA Protocol Stack Deep Core™ © Link Evolution Corp. All right Reserved.

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570 Ohito, Ohito-cho, Tagata-gun, Shizuoka-ken, JAPAN

Precautions for Handling of Wireless Communication Devices
Bluetooth® Module: TEC-BTM (GH30 model)
Wireless LAN Module: TEC-WLM (GH40 model)

Trade Mark

Bluetooth is a trademark owned by Bluetooth SIG, Inc. and used by TOSHIBA TEC CORPORATION under license from Japan Total Design Communication Co., Ltd.

Cautions

General

For all countries and areas

This product is a wireless communication device, and the use of this product is restricted to the following countries or areas. If the product is used in the countries or areas other than the following, you may be punished according to the laws of those countries or areas.

Japan, USA, Canada, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, Portugal, Spain, Sweden, The Netherlands, United Kingdom, Australia, New Zealand, Mexico*, Switzerland, Norway, Iceland, Hungary, Liechtenstein

*: Applicable only to the Bluetooth Module.

For Europe

CE 0682 ①

Hereby, TOSHIBA TEC CORPORATION, declares that this TEC-BTM is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

This equipment uses a radio frequency band that has not been harmonised throughout all EU and EFTA countries, and can be used in the following countries.

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, Portugal, Spain, Sweden, The Netherlands, United Kingdom, Switzerland, Norway, Iceland, Hungary, Liechtenstein

For USA

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modification not expressly approved by manufacturer for compliance could void the user's authority to operate the equipment.

For Canada

Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment that is installed outdoors is subject to licensing.

For safety

Do not use this product in locations where use may be forbidden, for example, in an aeroplane or a hospital. If you do not know the forbidden areas, please refer to and follow the airline company or medical institution guidelines.
Flight instrument or medical equipment may be affected, causing a serious accident.

Since this product uses extremely low power compared with mobile phones, it cannot possibly interfere the pacemakers and defibrillators. However, if the use of this product should be likely to have affected the pacemaker or defibrillator, immediately stop using the product and contact your TOSHIBA TEC sales agent.

Do not disassemble, modify, or repair the product. Doing so may cause injury. Also, modification is against the Laws and Regulations for Radio Equipment. Please ask your TOSHIBA TEC sales agent for repair.

Precaution in use

This product communicates with other devices by radio. Depending on the installation location, orientation, environment, etc., its communication performance may deteriorate or devices installed near by may be affected.

Keep away from a microwave.
Communication performance may deteriorate or a communication error may occur due to the radio emitted from a microwave.

Since the Bluetooth and wireless LAN use the same radio frequency band, each radio wave may interfere with each other when they are used at the same time, causing a deterioration of communication performance or a disconnection of network. If there is any problem with connection, please stop using either Bluetooth or wireless LAN.

Do not use the product on a metal table or near a metal object.
Communication performance may be deteriorated.

TEC-BTM Specification

- Bluetooth class 2
- Built-in protocol stack activated by Bluetooth V1.1 serial port profile
- Operating temperature: -5 to 50°C 25% to 85%RH (No condensation)
- Dimensions: 38.1 mm (W) x 25.4 mm (H) x 7 mm (D)

TEC-WLM Specification

- Built-in IEEE802 Part 11b (802.11b)
- Operating temperature: -5 to 50°C 25% to 85%RH (No condensation)
- Dimensions: 67.8 mm (W) x 36.8 mm (H) x 7.5 mm (D)

Changes or modifications not expressly approved by manufacturer for compliance could void the user's authority to operate the equipment.

CAUTION!

1. *To avoid injury, be careful not to catch or jam your fingers while opening or closing the cover.*
2. *Do not touch moving parts. To reduce the risk that fingers, jewellery, clothing, etc., be drawn into the moving parts, turn off the power switch to stop movement.*

Safety Summary

Personal safety in handling or maintaining the equipment is extremely important. Warnings and Cautions necessary for safe handling are included in this manual. All warnings and cautions contained in this manual and written inside or outside of the printer should be read and understood before handling or maintaining the equipment.
Do not attempt to effect repairs to this equipment. If a fault occurs that cannot be rectified using the procedures described in this manual, turn off the power, then contact your authorised TOSHIBA TEC representative for assistance.

Safety Precautions

This Owner's Manual and the products (machines) which you have purchased contain indications which should be observed in order to use the machines safely and prevent harm to yourself and others and damage to property. The meanings of these indications and symbols are given below.
Read these indications and become familiar with their contents before reading this Owner's Manual.

⚠ WARNING	This indicates that there is the risk of **death** or **serious injury** if the machines are handled improperly or contrary to this indication.

- If water or any other liquid enters the machine, turn off the power. Continuous use of the machine under such conditions may cause fire or electric shock.
- If the enclosure is damaged when dropped or subject to shock, turn off the power. Continuous use of the machine under such conditions may cause fire or electric shock.
- Avoid continuous exposure to direct sunlight or high temperature as this may cause fire.
- Do not remove covers or modify the machine by yourself. Doing so may cause fire or electric shock.
- Avoid water, operation with wet hands or cleaning with a moistened cloth. Failure to do this may cause fire or electric shock.
- Do not wipe the machine with a cloth moistened with thinner or other volatile solvent as this may cause fire or electric shock.
- Use the specified battery only. Failure to do this may cause fire or electric shock.
- Danger of explosion if the battery is incorrectly replaced. Replace the battery only with TOSHIBA TEC CORPORATION, Battery Pack Model B-SP2D-BT, 7.4 V 1400 mAh Li-ion.
  Discard used batteries according to the manufacturer's instruction.
- ATTENTION:
  Il ya denger d'explosion s'il ya remplacement incorrect de la batterrie.
  Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
  Mettre au rebut les batteries usagées conformément aux instructions du fabricant.
- Do not disassemble and modify the battery because it has a protection unit in it. Doing so may break the protection unit, causing the battery to heat up, burst or burn.
- If the battery gets wet, dry it completely. Using a wet battery may cause fire or electric shock.

- Be aware of the following precautions when using batteries. Otherwise they could heat up, burst or burn.

  - Do not throw the battery into fire or heat it with a microwave or oven, etc.
  - Do not load the battery with the electrodes reversed.
  - Do not connect the electrodes with metal objects like wire. Do not carry or store the battery along with metal objects such as necklaces, hairpins, etc.
  - Do not stick a needle into, hammer, step on, or drop the battery.
  - Do not solder the battery.
  - Do not leave the battery where the temperature is more than 60° centigrade, such as inside a car or in direct sunlight.

⚠ **CAUTION**	This indicates that there is the risk of personal **injury** or **damage** to objects if the machines are improperly handled contrary to this indication.

- Keep away from flame or other sources of heat. Failure to do this may cause fire or machine failure.
- Do not drop or shock the machine as this may cause machine failure.
- During lightning, turn off and keep away from the machine because of danger of electric shock and machine failure.
- Avoid locations subject to rapid change in temperature as this causes condensation, causing electric shock or machine failure.
- Do not damage the print head, platen or strip roller with a sharp object. Doing so may cause machine failure.
- Do not touch or contact the print head element with a metal object. Doing so may cause machine failure.
- Use the specified media only. Failure to do this may cause machine failure.
- Be sure to turn off the machine before replacing the battery, or machine failure may occur.

- Do not charge the battery near flame or under direct sunlight. High temperature may activate or damage the protection unit of the battery, disabling the electric charge or causing it to overheat, burst, or burn.
- Unload the battery when the machine will not be used for a long time. Failure to do this may cause machine failure.
- Keep the battery away from flame, a heat source or other locations subject to high temperature.
  Failure to do this may cause it to over heat or burn.
- Use the specified battery charger only. Failure to do this may cause the battery to overheat, burst or burn.
- Do not force the battery into the machine or battery charger. Doing so may cause the battery to overheat, burst or burn. Check for the correct electrode.
- Do not connect the battery to a power outlet or a car cigarette lighter jack as this may cause the battery to overheat, burst or burn.
- Because the B-SP2D-BT battery is exclusively for the B-SP2D printer, do not use the battery in other machines. Doing so may damage the battery or affect the performance and life of the battery.

Precautions

The following precautions will help to ensure that this machine will continue to function correctly.

(1) Try to avoid locations that have the following adverse conditions:
  * Temperatures below -5°C and above 40°C
  * Direct sunlight
  * Excessive vibration

(2) The cover should be cleaned by wiping with a dry cloth or a cloth slightly dampened with a mild detergent solution. NEVER USE THINNER OR ANY OTHER VOLATILE SOLVENT on the plastic covers.

(3) USE ONLY TOSHIBA TEC SPECIFIED media.

(4) DO NOT STORE the media where it might be exposed to direct sunlight, high temperatures, high humidity, dust, or gas.

(5) Any data stored in the memory of the printer could be lost during a printer fault.

(6) DO NOT open the media cover and battery cover during operation. Doing so will stop printer operation.

(7) DO NOT scratch the surface of printed labels or receipt with a sharp object.

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CAUTION!

1. *This manual may not be copied in whole or in part without the prior written permission of TOSHIBA TEC.*
2. *The contents of this manual may be changed without notification.*
3. *Please refer to your local Authorised Service representative with regard to any queries you may have in this manual.*

1. INTRODUCTION

Thank you for purchasing the TEC B-SP2D series portable printer.

This printer displays its high performance with extraordinarily high speed printing up to 80 mm/sec. It has a considerably compact and light body - 44 mm in height, 114 mm in width and 91 mm* in depth, weighing about 380 g*. (*: For the GH40 model, 101 mm in depth and 410 g in weight.)

Besides the RS-232C, IrDA, Bluetooth, and wireless LAN which require no cable for data transmission between a handy terminal and the printer are adopted as data communication method.

Owing to a low power consumption design and use of a chargeable lithium-ion battery as a power source, this printer can issue max. 650 pieces of 40-mm pitch labels with a fully-charged battery. (The number of labels varies depending on the operating environment, print condition, etc.)

An automatic power off function allows obtaining the battery driving time to the maximum. There are four choices of the setting time: 1 minute, 5 minutes, 30 minutes and 120 minutes.

Loading a label roll is very simple; just put a label roll into the printer and close the media cover. A belt holder provided on the rear of the printer enables the printer to be held hands-free at your waist for improved productivity.

This manual contains general set-up and maintenance information and should be read carefully to help gain maximum performance and life from your printer. For most queries please refer to this manual and keep it safe for future reference.

1.1 APPLICABLE MODEL

- B-SP2D Series

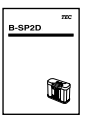
Model name description

B - S P 2 D - G H 2 0 -Q M

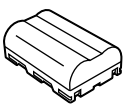
- Destination
- Interface
  - 20: IrDA + RS-232C
  - 30: IrDA + Bluetooth
  - 40: IrDA + Wireless LAN
- Print mode
  - H: Batch/Strip mode
- Dot density of the print head
  - G: 8 dots/mm

1.2 ACCESSORIES

Owner's Manual (1 copy)

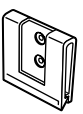


Battery (1 pc.)

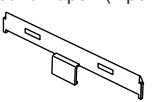


Media Guide (2 pcs.)

Belt Holder (1 pc.)



Media Guide for Outside Wound Paper (1 pc.)



Cable Clamp (1 pc.) (GH20 model only)

SMW-3x8 Screw (2 pcs.)

Ferrite Core (1 pc.) (GH20 model only)

SMW-3x8 Screw (1 pc.) (GH20 model only)

2. SPECIFICATIONS

2.1 PRINTER

Item	Description
Dimensions	GH20/30 model: 114mm (W) x 91mm (H) x 44mm (D) GH40 model: 114mm (W) x 101mm (H) x 44mm (D)
Weight	GH20/30 model: Approx. 380 g (Including a battery) GH40 model: Approx. 410 g (Including a battery)
Operating Temperature	-5°C to 40°C
Operating humidity	25% to 85% RH (No condensation)
Print mode	Batch mode/Strip mode
Print head	Thermal print head
Print method	Thermal direct
Print head dot density	8 dots/mm (203 dpi)
Print speed	12.5 mm/sec.to 80 mm/sec. (NOTE 1)
Effective print width	48 mm
Font (NOTE 2)	Standard characters and characters under bar codes (12x24 dots), Bold characters (48x96 dots), Writable characters (16x16 dots, 24x24 dots), Price Font1 (16x40 dots), Price Font2 (32x48 dots), Letter Gothic (14.3 point), Presentation (27 point), Helvetica Medium (9, 15, 18 point), Helvetica bold (18, 21 point), Helvetica Italic (18 point), Times New Roman Medium (12, 15, point), Times New Roman Bold (15, 18, 21 point), Times New Roman Italic (18 point), Prestige Elite Medium (10.5 point), Prestige Elite Bold (15 point), Courier Medium (15 point), Courier Bold (18 point), OCR-A (12 point), OCR-B (12 point), GOTHIC725 Black (6 point)
Outline Font (NOTE 2)	TEC Font1, TEC Font1 (Proportional), Price Font
Bar code types	NW7, EAN 8, EAN 13, JAN 8, JAN 13, UPC-A, UPC-E, CODE 39, Interleaved 2 of 5, EAN128, CODE128, MSI, RSS, Customer Bar Code
2-dimensional code(NOTE 3)	QR Code, PDF417, Data Matrix, Maxicode, Micro PDF417

Item	Description
Interface	GH20 model: IrDA + RS-232C GH30 model: IrDA + Bluetooth GH40 model: IrDA + Wireless LAN
Power source	Lithium ion battery 7.4V 1400mA (nominal)

***NOTES**: 1. Print speed automatically changes depending on the operating temperature, head temperature, and battery voltage.*
2. Some fonts and bar codes are not available depending on the print mode.
3. Some two-dimensional codes are not available depending on the print mode.

2.2 SERIAL INTERFACE (RS-232C)

The following specification is applicable only to the GH20 model.

Item	Description
Baud rate	9600 ~ 115,200 bps
Protocol	XON/XOFF, 8 bit data, Even parity, Non parity, Start bit = 1 bit, Stop bit = 1 bit
Signals	TXD, RXD

2.3 BLUETOOTH INTERFACE

The following specification is applicable only to the GH30 model.

Item	Description
Type	Bluetooth V1.1
Support profile	Serial Port Profile
Radio class	Class 2
Communication method	Bi-directional (Half-duplex)
Communicating distance	3m (360 degrees angle)
Data code	JIS 8 code, Shift JIS code
Transmission control	Credit Based Flow Control
Operating mode	Slave mode

2.4 WIRELESS LAN INTERFACE

The following specification is applicable only to the GH40 model.

Item	Description
Communication method	IEEE802.11b
Supporting print protocol	Socket/LPR
Communicable distance	100 m (When there is no obstacle.)
Client protocol	DHCP, WINS
Security protocol	WEP (40 bits/104 bits), MD5/EAP
Flow control	TCP/IP
Antenna	Built-in
Parameter setting	Via HTTP, via IrDA

2.5 IrDA INTERFACE

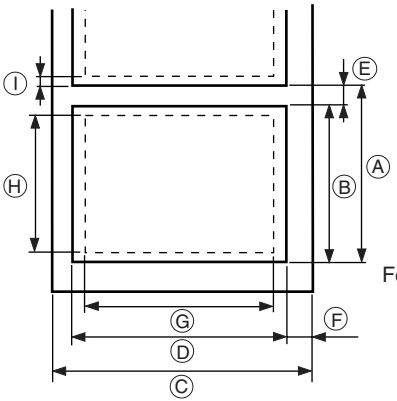
Item	Description
Type	Physical layer conforming to IrDA-SIR V1.2 (Low Power)
Transmission speed	9,600 ~ 115,200 bps
Communicable distance	0.1 m max.
Peak wavelength of the infrared ray	870 nm
Communicable angle	±15 degrees max.
Ambient light immunity	1,000 lx max. (under a fluorescent lamp or incandescent lamp)
Protocol	Start-stop synchronisation, Half duplex transmission
	Start bit = 1 bit, Stop bit = 1 bit, 8 bit data, Non parity
Data code	JIS 8 code, Packed BCD code, Shift JIS code
Error detection	CRC (16 bits),
	Generating polynomial $X^{16}+X^{12}+X^5+1$
Transmission protocol	TEC Protocol, Ir COMM (9-WIRE)

2.6 BATTERY

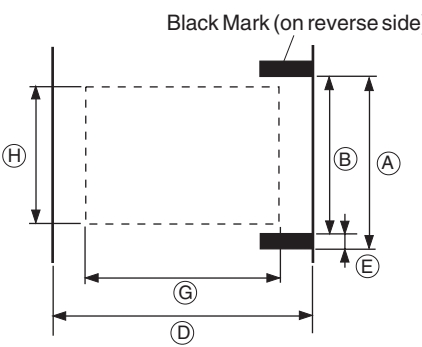
Item	Description
Type	Lithium-ion battery
Voltage	DC 7.4V
Capacity	1400mAh

2.7 MEDIA

Label



Tag/Receipt



(Unit:mm)

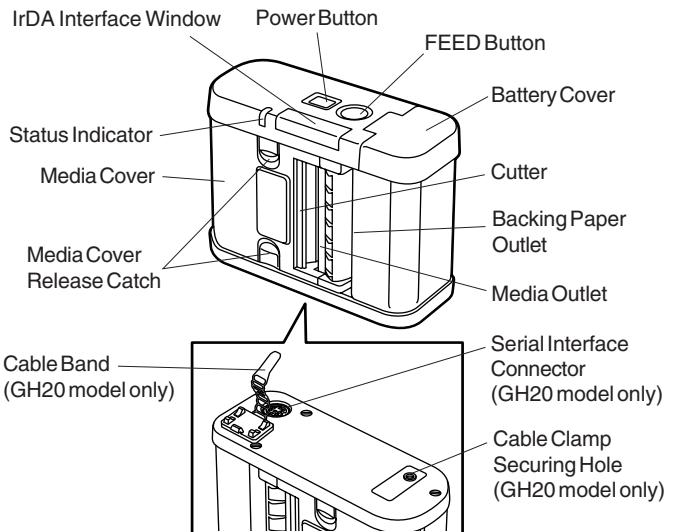
Item \ Media	Label		Tag/Receipt	Receipt
	Batch mode	Strip mode	With black mark	No black mark
Ⓐ Label/Receipt pitch	10.0 – 167.0	13.0 – 67.0	10.0 – 507.0	Variable
Ⓑ Label/Receipt length	7.0 – 160.0	10.0 – 60.0	7.0 – 500.0	Variable
Ⓒ Backing paper width	28, 31, 34, 37, 40, 43, 46, 49, 52, 55, 58±0.5 (NOTE 2)		———	
Ⓓ Media width	25.0 – 55.0 (NOTE 3)		28, 31, 34, 37, 40, 43, 46, 49, 52, 55, 58±0.5 (NOTE 2)	
Ⓔ Gap/black mark length	3.0 – 7.0		3.0 - 7.0	———
Ⓕ Distance between the label edge and the backing paper edge	1.5 – 7.0		———	
Ⓖ Effective print width	48.0			
Ⓗ Effective print length	7.0 – 160.0	7.0 – 60.0	7.0 - 500.0	Variable
Ⓘ Margin	1.0 (gap = 7 mm) – 5.0 (gap=3 mm)			———
Outer roll diameter	∅36 (max.)			
Roll direction	Either is acceptable			

NOTES:

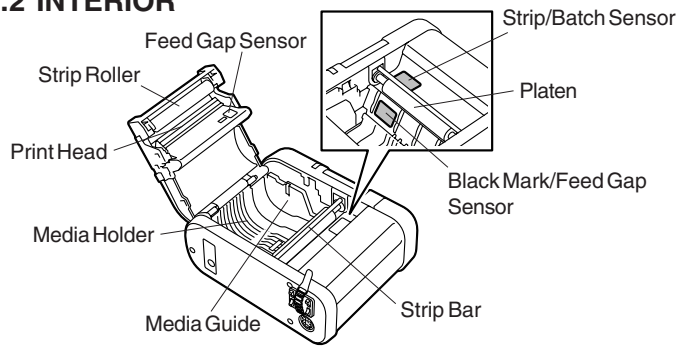
1. *Do not use the media other than the above to ensure print quality and print head life.*
2. *28.0 mm and 31.0 mm are not applicable to the media rolled outside.*
3. *This specification is applicable only to the media rolled inside. For media rolled outside, the specification is 31.0 mm - 55.0 mm.*

3. APPEARANCE

3.1 FRONT VIEW



3.2 INTERIOR



3.3 OPERATION PANEL

FEED Button

When this button is pressed, the printer issues the same label as the one issued last. The function of this button differs depending on the print mode.

Status Indicator (Red/Orange/Green)

The status indicator indicates the printer status; for example, lights when the power is turned on or blinks when an error has occurred. For details, refer to Section 11, Troubleshooting.

Power Button

A push power switch

To turn on the power, press this switch once. To turn off the power, press and hold this switch for about 2 seconds. The power will automatically turn off when the specified idle time* (selectable from 1, 5, 30, and 120 minutes) has passed. To turn on the power again, press this button. The time can be selected on the PC.

* Period of time when no operation is performed or no data is sent from the PC.

4. INSTALLING THE PRINTER

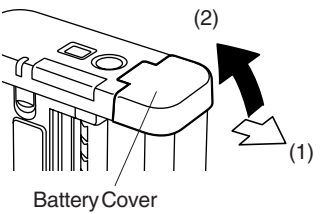
4.1 LOADING THE BATTERY

WARNING!

1. *Be sure to turn OFF the printer before loading the battery.*
2. *Use the B-SP2D-BT lithium-ion battery pack only. And to charge the B-SP2D-BT battery pack, be sure to use the optional B-SP2D-CHG battery charger or B-SP2D-CHG5 5-slot battery charger. Failure to do this may cause explosion, combustion, or heat.*
3. *If the battery pack leaks liquid or gives out smoke or bad smell, immediately stop using it and keep it away from fire. Failure to do this may cause explosion or combustion.*
4. *In the United States, used lithium ion batteries should be returned to the store where you bought the machine. (USA only)*
5. *LITHIUM ION BATTERY*
   DISPOSE OF PROPERLY
   Caution: Do not handle damaged or leaking lithium ion battery.

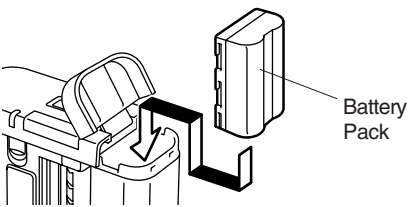
***NOTE**: Regarding the charging procedure, refer to the Owner's Manual of the B-SP2D-CHG or B-SP2D-CHG5.*

1) First slide the battery cover (1) and then open the battery cover (2).



2) Load a fully charged battery into the printer with the electrode facing down.

NOTE: *Load the battery in the correct orientation as indicated in the following picture.*



3) Close the battery cover completely.

NOTES*:*

1. *If the battery cover is not completely closed, the battery pack may drop from the printer while it is carried, causing injury.*
2. *Be careful not to apply excessive force to the battery cover when it is opened, as this may break the battery cover.*

■ Battery status indication at the power on time

Fully charged:	Flashes in red for a few seconds, and then lights in green.
Battery near end:	Flashes in red for a few seconds, and then lights in orange.
Low battery:	Flashes in red for a few seconds, and then lights in red.

If the status indicator does not light at all, there may be one of the following problems:

- The battery pack is not loaded.
- The battery is almost dead. (The battery has been excessively discharged.)
- The printer is faulty.

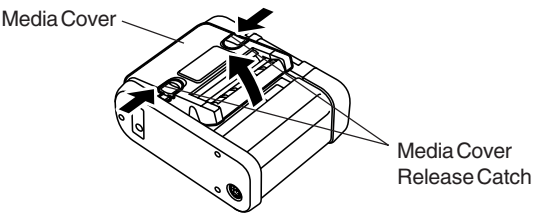
4.2 INSTALLING THE MEDIA GUIDE

WARNING!

A cutter is attached to the inside of the media cover. Care should be taken not to injure your hand with the cutter when opening the cover.

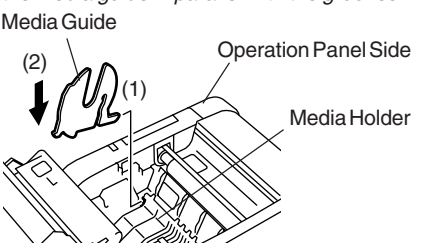
NOTE: *The media guides are not required for a 58 mm wide media roll.*

1) Slide the media cover release catches inside and open the media cover.



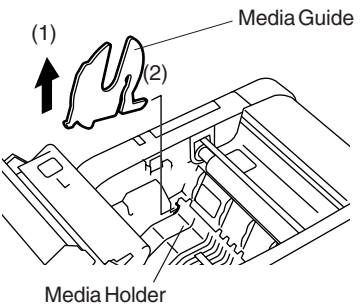
2) Fit one media guide into the media holder's edge of the operation panel side, and the other one into a groove which corresponds to the width of media to be used. First insert side (1), then (2) until it snaps in position.

NOTE*:Be sure to fit the media guide in parallel with the grooves.*



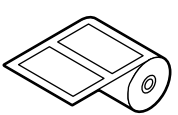
***NOTE**: When using a 55 mm wide media roll, attach the media guides to both edges of the media holder.*
When using a meida roll which is narrower than 55 mm, move only the media guide on the printer's bottom side (opposite side to the operation panel). The position of the media guide of the operation panel side is fixed.

3) To remove the media guide, first unhook side (1), and then (2).

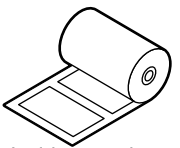


4.3 INSTALLING THE MEDIA GUIDE FOR OUTSIDE WOUND PAPER

Either roll direction is acceptable on this printer.



Outside wound paper



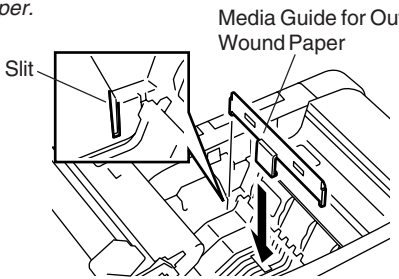
Inside wound paper

However, when using the outside wound paper, it is necessary to fit the media guide for outside wound paper. Without this part, a paper jam may occur.

When fitting the media guide for outside wound paper, insert it into the slits of the printer.

***NOTES**:*

1. *When using outside wound paper that is 34 to 55mm wide, first fit the media guides, and then the media guide for outside wound paper.*
2. *Do not fit the media guide for outside wound paper when using an inside wound paper.*



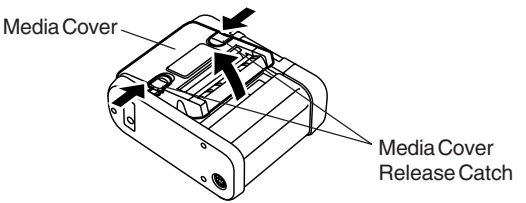
5. LOADING THE MEDIA

WARNING!

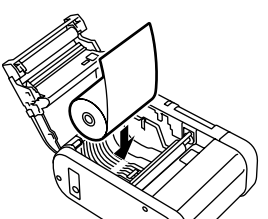
A cutter is attached to the inside of the media cover. Care should be taken not to injure your hand with the cutter when opening the cover.

This printer prints both labels and receipts.
When loading the media, you do not have to turn off the power.

1. Slide the media cover release catches inside and open the media cover.

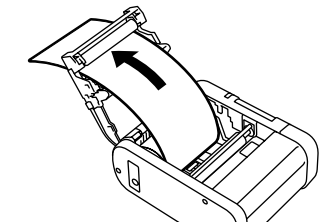


2. Put a label roll or a receipt roll into the media holder unit in the orientation as shown below.

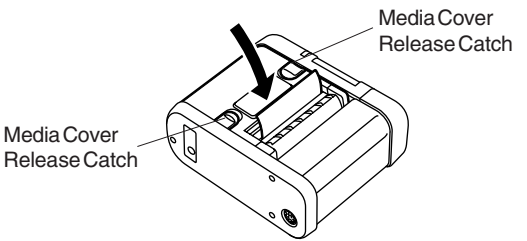


- **Batch issue**

1. Insert the leading edge of the label roll into the media outlet.



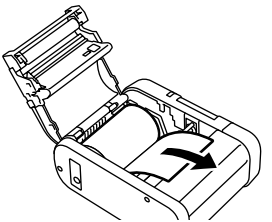
2. Close the media cover completely. Make sure that the media cover release catches snap back into position.



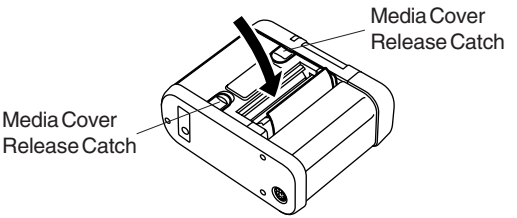
3. When the label or tag has been loaded in the power on state, the label or tag will be automatically fed to adjust the print start position (only when the black mark or feed gap sensor is selected).
   Receipt paper will not be fed automatically.

- **Strip issue**

1. Unroll the label roll a little and remove a label.



2. Close the media cover completely. Make sure that the media cover release catches snap back into position.



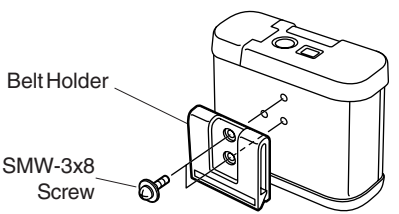
3. When the label has been loaded in the power on state, the label will be automatically fed to adjust the print start position (only when the feed gap sensor is selected).

NOTE: *Be sure to take up any slack in the media roll before closing the media cover. An incompletely closed cover will cause a media skew, print position misalignment, poor print quality, paper jam, etc.*

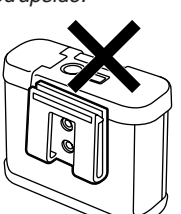
6. SECURING THE PRINTER TO YOUR WAIST

CAUTION!
Care should be taken not to drop the printer when securing it to your waist.

1) Attach the enclosed belt holder to the printer back with the two SMW-3x8 screws. It can be attached both horizontally and vertically.



***NOTE**: When attaching the belt holder horizontally, the printer's upper side should be positioned upside.*

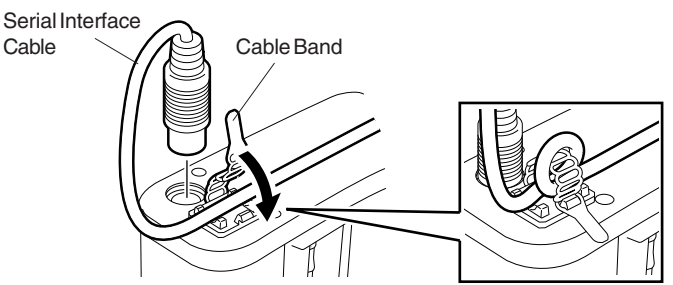


2) Insert the belt holder into your belt and lower the printer to secure it to your waist.

7. CONNECTING THE SERIAL INTERFACE CABLE (GH20 model only)

1) Turn off the printer.
2) Place the printer upside down, and connect the serial interface cable to the printer.
3) Secure the serial interface cable tightly to the printer with the cable band. Then, fold back the cable band's end and insert it into any of the openings of the band.

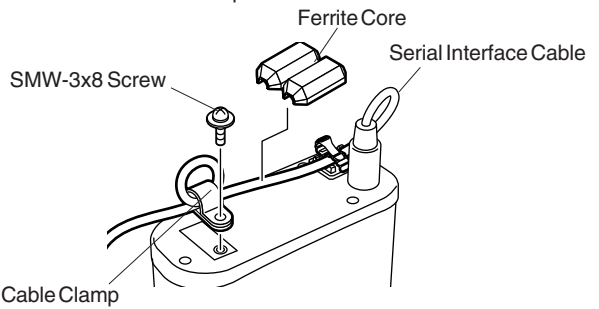
***NOTE**: If the serial interface cable is still loose, wind it around the cable band one time as shown below.*



4) Secure the serial interface cable to the printer with the enclosed cable clamp and SMW-3x8 screw as shown in the picture below.

***NOTE**: Allow the cable between the connector and the cable clamp to slack. Failure to do this may damage the internal wire or connector terminal.*

5) Put the enclosed ferrite core on the serial interface cable between the connector and the cable clamp.



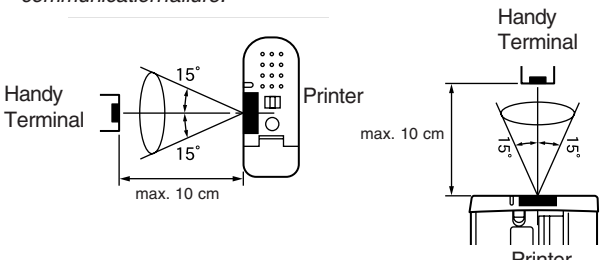
***NOTE**: Use the serial interface cable model CABLE-SP2D-S or equivalent which meets the following specifications:*

- *1.2 m long*
- *Shield type*
- *When in use, the enclosed ferrite core is attached.*
- *Printer side connector is 8-pin Male MINI DIN type.*

8. ISSUING THE MEDIA

NOTES:

1. *Radio communication between a handy terminal and the B-SP2D printer is guaranteed when the handy terminal is in the operator's hand and the printer is secured at the waist. Proper radio communication may not be obtained when used on other conditions and in areas subject to noise and radio interference.*
2. *Be sure to disconnect the RS-232C interface cable from the printer before performing IrDA communication.*
3. *IrDA is available on the condition indicated below. The following performance is obtained under fluorescent light (max. 1000 lx). Care must be taken to prevent the direct sunlight or intensive light from coming into the IrDA interface window. Failure to do this may cause a communication failure.*



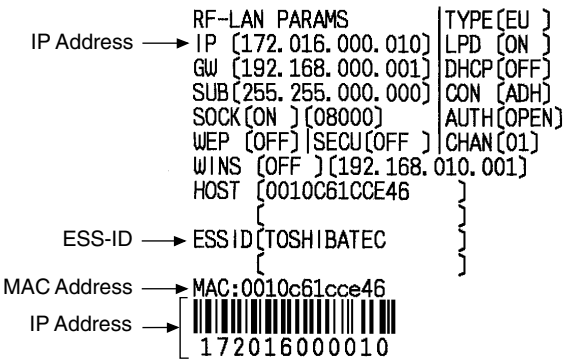
4. *In the case of Bluetooth communication, make sure that there is nothing to block the radio between the printer and the PC or handy terminal. Failure to do this may cause a communication failure.*

1. Turn on the printer.

***NOTES**:*

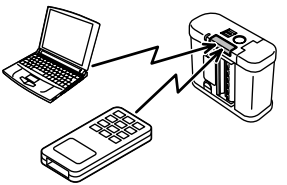
1. For the GH30 model, pressing and holding the power button causes the printer to automatically issue a label on which the bar code indicating the Bluetooth device address is printed.

2. For the GH40 model, pressing and holding the power button causes the printer to automatically issue a label on which the parameters regarding the wireless LAN, such as, IP address, MAC address, ESS-ID, etc. are printed.

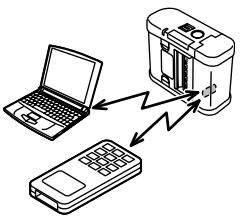


2. Send data from the handy terminal to the printer. (Regarding the operation of the handy terminal, please refer to the handy terminal's operating manual.)

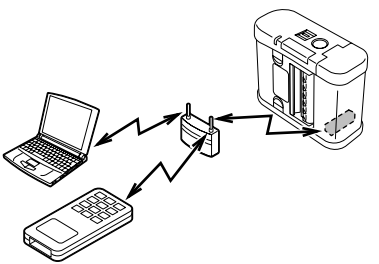
(IrDA Communication Sample)



(Bluetooth and Wireless LAN (Adhoc) Communication Sample)



(Wireless LAN (Infrastracture) Communication Sample)

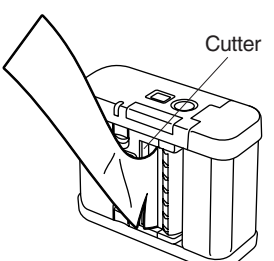


3. Issuing media
   - When issuing the labels in batch mode, the number of labels can be specified. To re-issue the labels, press the FEED button. This operation differs depending on the print mode.
   - When issuing the labels in strip mode, the printer prints labels one by one each time the FEED button is pressed. Before issuing the next label, remove the printed label. This operation differs depending on the print mode.

   NOTE: *Trim off the backing paper coming from the backing paper outlet.*

   - When issuing a receipt, press the FEED button after printed to feed it to the position where it is easily cut. Each time the FEED button is pressed, the receipt is fed for 20 mm.
4. Trim off the printed media upward or downward with the cutter.

   NOTE: *Do not pull the media toward the feed direction, as this will misalign the print position of the next media.*



9. CARE/HANDLING OF THE MEDIA

CAUTION!

Be sure to read carefully and understand the Supply Manual. Use only media that meets specified requirements. Use of non-specified media may shorten the head life and result in problems with bar code readability or print quality. All media should be handled with care to avoid any damage to the media or printer. Read the following guideline carefully.

- Do not store the media for longer than the manufactures recommended shelf life.
- Store media rolls on the flat end, do not store them on the curved sides as this might flatten that side causing erratic media advance and poor print quality.
- Store the media in plastic bags and always reseal after opening. Unprotected media can get dirty and the extra abrasion from the dust and dirt particles will shorten the print head life.
- Store the media in a cool, dry place. Avoid areas where they would be exposed to direct sunlight, high temperature, high humidity, dust or gas.
- The thermal paper used for direct thermal printing must not have specifications which exceed Ca^{++} 800 ppm, Na^{+} 800 ppm, K^{+} 800 ppm and Cl^{-} 600 ppm.
- Some ink used on pre-printed labels may contain components which shorten the print head's product life. Do not use labels pre-printed with ink which contains hard substances such as carbonic calcium ($CaCO_3$) and kaolin (Al_2O_3, $2SiO_2$, $2H_2O$).

For further information please contact your local distributor or your media manufacturer.

10. GENERAL MAINTENANCE

WARNING!

1. *Be sure to turn off the printer and remove the battery pack prior to performing any maintenance.*
2. *DO NOT POUR WATER directly onto the printer.*
3. *Care should be taken not to injure your hand with the cutter when cleaning.*

CAUTION!

1. *Do not touch the print head element with bare hands, as static may damage the print head.*
2. *Do not use any tool that may damage the print head.*
3. *Never use the volatile solvents such as thinner or benzene for cleaning, as this may damage the sensor window, causing a paper feed error or machine failure.*
4. *DO NOT APPLY cleaner or detergent directly onto any cover or panel.*
5. *DO NOT clean the covers with alcohol as it may cause them to discolour, lose their shape or develop structural weakness.*

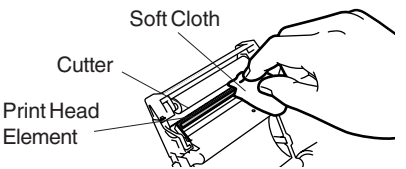
10.1 CLEANING

To help retain the high quality and performance of your printer it should be regularly cleaned. The greater the usage of the printer, the more frequent the cleaning. (i.e. low usage = weekly: high usage = daily).

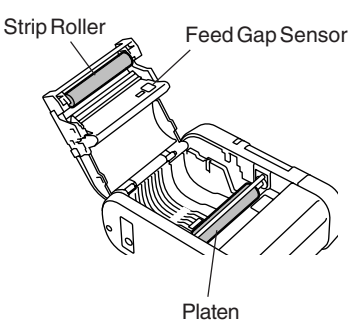
1. Turn off the printer, open the battery cover, and remove the battery pack.
2. Open the media cover.
3. Remove the media roll from the printer.

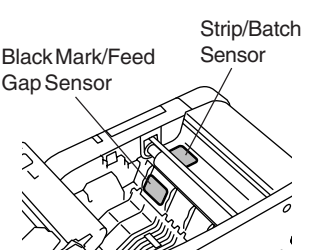
4. Clean the print head element with a print head cleaner, cotton swab, or soft cloth slightly moistened with ethyl alcohol.

   ***NOTE**: Please purchase the print head cleaner (P/No. 24089500013) from your authorised TOSHIBA TEC service representative.*



5. Wipe the cutter, platen, and strip roller with a soft cloth moistened with ethyl alcohol. Remove dust or foreign substances from the internal parts of the printer, if any.
6. Remove paper particles or stains from the feed gap sensor, black mark/ feed gap sensor, and the strip/batch sensor with a soft cloth.

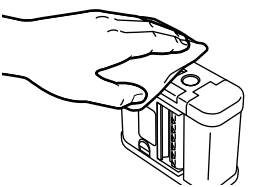




10.2 COVERS

1. Turn off the power, open the battery cover, and remove the battery pack.
2. The covers should be cleaned by wiping with a dry cloth or a cloth slightly dampened with a mild detergent solution.

NOTE: *Clean the printer cover with an electrostatic free cleaner for automated office equipment.*



10.3 REMOVING JAMMED MEDIA

1. Turn off the printer.
2. Open the media cover.
3. Remove the media roll from the printer.
4. Remove the jammed media. DO NOT USE any sharp implement or tool as these could damage the printer.
5. Clean the print head and platen, then remove any further dust or foreign substances.

11.TROUBLESHOOTING

WARNING!

If you cannot solve a problem with the following solutions, do not attempt to repair it by yourself. Turn off the printer, then contact your TOSHIBA TEC representative for assistance.

When a problem occurs during operation, the status indicator will blink or light. Refer to the following troubleshooting guide and take corrective action.

Status Indicator	Cause	Corrective action
Blinks in Red	Media end	Load a new media roll.
	The media cover is open.	Close the media cover completely.
	The printer is jammed with media.	Turn off the printer, remove the jammed media, and re-load the media roll correctly.
	The print head element is broken.	Contact a TOSHIBA TEC service representative for repair.
	The print head temperature reached the upper limit of the operating temperature.	Open the media cover and allow the print head to cool.
	A communication error occurred.	Check that the interface cable is connected firmly. Check the communication parameters.
	Flash ROM write error or erase error occurred.	Open the media cover and close it again. If the error occurs again, remove the battery pack and ask TOSHIBA TEC representative for repair.

Status Indicator	Cause	Corrective action
Blinks in Red	There is insufficient area in the flash ROM.	Open the media cover and close it again. Erase the data.
	The print mode is not selected correctly.	Open the media cover and close it again. Send the correct print mode from the PC or handy terminal.
Lights in Red	The battery voltage is low.	Turn off the printer and replace the battery with a fully charged one.
Lights in Orange	The battery is nearly end.	Replace the battery with a fully charged one as soon as possible.
Blinks in Green or Orange	The printer is printing or communicating with the PC or handy terminal.	Wait until the printer finishes printing or communicating.
Lights in Green	The power is on.	This is not a failure or an error.

Other problems	Cause	Corrective action
The printer power does not turn on by pressing the power switch.	The battery pack is not loaded.	Load a fully charged battery pack.
In spite of using a fully charged battery, it does not last long.	The battery life is expired.	Replace the battery with a new one which has been fully charged.

Other problems	Cause	Corrective action
The printer stops printing each time one label is issued.	The battery is nearly end.	Replace the battery with a fully charged one.
	The battery life is expired.	Replace the battery with a new one which has been fully charged.
IrDA communication cannot be used.	The printer power is not turned on.	Turn on the power.
	The printer is apart from the PC or handy terminal for over 10cm.	Move the printer closer, within 10cm.
	The printer is not positioned in a communicable angle.	Move the printer to the proper position.
	Direct sunlight is coming into the IrDA interface window.	Avoid direct sunlight.
	The IrDA interface window is dirty.	Clean the IrDA interface window.
	The serial interface cable is connected. (GH20 model only)	Disconnect the serial interface cable from the printer.
	The printer is communicating with the PC or handy terminal by the Bluetooth. (GH30 model only)	Terminate the Bluetooth communication.

Other problems	Cause	Corrective action
IrDA communication cannot be used.	The communication mode is incorrect.	Send the correct communication mode.
	The printer ID is incorrect.	Set the correct printer ID on the PC or handy terminal.
	The IrDA interface window faces improper direction.	Move the printer so that the IrDA interface window faces the PC's or handy terminal's one.
	The print mode is incorrect.	Correct the print mode.
	The transmission rate is incorrect.	Correct the transmission rate.
Serial interface communication cannot be used. (GH20 model only)	The printer power is not turned on.	Turn on the power.
	The serial interface cable is not connected.	Firmly connect the serial interface cable.
	The print mode is incorrect.	Correct the print mode.
	The transmission rate is incorrect.	Correct the transmission rate.

Other problems	Cause	Corrective action
Inquiries cannot be made by the Bluetooth. (GH30 model only)	The printer power is not turned on.	Turn on the power.
	The printer is positioned out of communication range.	Move the printer closer, within 3 m.
	The operating area is subject to noise or interference.	Avoid such locations.
	One minute has passed since the printer power was turned on.	Make an inquiry within one minute after power on.
Bluetooth communication cannot be used. (GH30 model only)	The printer power is not turned on.	Turn on the power.
	The printer is positioned out of communication range.	Move the printer closer, within 3 m.
	The operating area is subject to noise or interference.	Avoid such locations.
	The printer address is not correctly set on the PC or handy terminal.	Set the correct printer address.
	The print mode is incorrect.	Correct the print mode.

Other problems	Cause	Corrective action
Wireless LAN communication cannot be used. (GH40 model only)	The printer power is not turned on.	Turn on the power.
	The printer is positioned out of communication range.	Move the printer closer to the position where the communication is possible.
	Obstacle blocks the radio wave.	Avoid locations where there is any obstacle between the printer and the access point, PC or handy terminal.
	The operating area is subject to noise or interference.	Avoid such locations.
	The printer address is not correctly set on the PC or handy terminal.	Set the correct printer address.
	The channel of the access point, the PC, or handy terminal is not correctly set.	Use the channel which does not interfere the adjacent access points.
	The print mode is incorrect.	Correct the print mode.

Other problems	Cause	Corrective action
Print failure	The print head is dirty.	Clean the print head.
	The media is discoloured.	Replace the media roll with a new one.
	Un-specified media is used.	Replace the media roll with the proper one.
	The media cover release catches are not locked completely.	Close the media cover so that the media cover release catches snap back into position.
Blurred print	Un-specified media is used.	Replace the media roll with the proper one.
	The battery life is expired.	Replace the battery with a new one which has been fully charged.
The printer receives print data but does not print.	The status indicator lights or blinks in red.	Clear the error.
	The media is not loaded correctly.	Re-load the media correctly.

TEC

TOSHIBA TEC CORPORATION

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